‘Time and the Historians in the Age of Relativity’

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Historians study, not Time in the abstract, but the long-term workings of Time as evidenced in the past.[1] Such a great canvas gives historians a lot to analyse, along with the practitioners of other longitudinal disciplines, including actuaries, anthropologists, archaeologists, astro-physicists, biologists, demographers, geographers, geologists, zoologists. Most specialise in one way or another. Yet they are aware that the synchronic moment is always part of a diachronic process, just as long-term legacies always contribute to the immediate moment. Furthermore, the past is constantly expanding, as Time passes daily, nano-second by nano-second. It is a mysterious, restless force, which bounds the cosmos. And there is no simple definition of Time in terms of T= . Instead, it is aptly described as the “familiar stranger”.[2]

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1 Note that the capital letter for Time indicates a generic temporality or state of timefulness, rather than specific dates or periods. Space with a capital S also refers to an abstract spatiality or rather than to specific spaces and places.

2 Julius T. Fraser, Time, the Familiar Stranger, Amherst 1987.

Needless to say, empirical historians do not devote much effort to worrying about its nature. They leave that quest to physicists and philosophers. Yet those who study the past cannot but be affected, even unwittingly, by changing cultural and scientific ideas about temporality. The greatest challenge during the last century has come from the ramifications, both direct and indirect, of the concept of relativity. In Paris in the 1910s, as the historian Lucien Febvre later recalled, the first circulation of Einstein's ideas caused an intellectual furore. Scholars from many disciplines gathered in informal seminars "to delimit, settle and measure precisely the ravages made in our theories by the great advances of modern physics".[3]

One immediate challenge was to traditional assumptions that Time was quietly providing an immutable framework, moving existence along in a smooth and unproblematic manner. Relativity theory, however, envisaged both temporality and spatiality in a new way. "Henceforth Space by itself, and Time by itself, are doomed to fade away into mere shadows," wrote the mathematician Hermann Minkowski, ominously enough, in 1908.[4] He was highlighting the implications of the new physics first introduced in 1905 by his friend and former pupil, Albert Einstein.[5] Far from being separate forces, lateral Space and longitudinal Time are inextricably intertwined. Again it was Minkowski who provided a pithy explanation. "Henceforth", he continued: "Space by itself, and Time by itself, are doomed to fade away into mere shadows, and *only a kind of union of the two will preserve an independent reality* [added emphasis]." The duality formed a seamless

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3 Undated written account by Lucien Febvre, as cited in Fernand Braudel, 'Personal Testimony', Journal of Modern History, 44. 1972, p. 460.

4 Hermann Minkowski (1864–1909), Space and Time, 1908, in: John J.C. Smart (ed.), Problems of Space and Time: Readings, New York 1964, p. 297.

5 For Albert Einstein (1879–1955), see Paul Davies, About Time: Einstein's Unfinished Revolution, London 1995, pp. 15, 31–32, 44–77; and Germany's Max Planck Institute for Gravitational Physics website: www.einstein-online.info.

composite, which he named as *Space-Time*. That portmanteau word has become a commonplace (although a minority of analysts, myself included, prefer *Time-Space*, as giving linguistic priority to the dynamic force of unidirectional Time).[6]

The reverberations of Einstein's reformulations are still being felt across all fields of knowledge. It is not too much to say that Einstein began a new "Age of Relativity", which still holds sway. To be sure, there are other potential appellations for the bellicose and inventive twentieth century. Eric Hobsbawm's "Age of Extremes" is one plausible example that readily springs to mind.[7] Nonetheless, the theoretical and practical impact of relativity not only within the pure and applied sciences but also across the humanities, social sciences, and the wider culture is so pervasive that Einstein's formulation has a serious claim to being one of the most apt definitions. In that context, it is worth noting that the appropriately named *Time Magazine* concurs. On 31 December 1999, it nominated Einstein as the outstanding "person of the twentieth century".[8]

For historians, a number of puzzling questions were raised by his new physics. If Time in the era of relativity is fading into a shadow, then should the discipline of history fade too? In the new physics, temporality can be understood, in certain specific circumstances, as curved or warped. Does that concept abolish any chance of finding a coherent narrative running from past to present? In fact, no. It should not and has not. Yet it has taken

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6 Penelope J. Corfield, Time and the Shape of History, London 2007, p. 16. I chose this usage independently but, upon further research, was pleased to find fellow revisionists: Milič Čapek, 'Time-Space rather than Space-Time' in id. New Aspects of Time: Its Continuity and Novelties, Dordrecht 1991; Erik Christiansen, The Musical Timespace: A Theory of Music Listening, Aalborg 1996; Jon May and Nigel Thrift (eds), Timespace: Geographies of Temporality, London 2001; Lu Cheng-Ming, Behind Civilization and History: Towards Understanding Man in Time-Space, London 2001.

7 Eric Hobsbawm, Age of Extremes: The Short Twentieth Century, 1914–91, London 1994.

8 Time Magazine, 31.12.1999, cover-page.

a circuitous route for historians to respond. Without going into all the ramifications of all the global debates, this essay explores schematically: relativity and the dethroning of absolute Time; the analytical rise of Space; the exploration of "lived Time" as a cultural variable; the challenge of atemporalism and postmodern scepticism; and, eventually in the early twenty-first century, the coming "temporal turn", with a refreshed understanding of Time *in* Space (and, naturally, *vice versa*).

I. Relativity and the Dethroning of Absolute Time

Einstein's great intellectual breakthrough managed both to demonstrate and to explain how time measurements, when made by observers moving at vastly different speeds, will not appear constant. Such an outcome appears to contradict everyday expectations. But time measurements actually vary in relation to the differential mobility of the observing agent. That is, people travelling in space at very different speeds would experience the passing of time at different rates. In one sense, it was a theoretical point, since in practice all humans live on or (in the case of astronauts) very close to Planet Earth. But practical understandings were also transformed. Einstein argued that Energy and Mass are not separate but are complexly linked. He provided the famous Einsteinian formula $E=mc^2$. It calculated the energy content (E) of a mass at rest, in terms of its mass (m) multiplied by the speed of light (c from the Latin *celeritas*) squared. Einstein himself agreed that the implications of relativity theory were epic.

"Time is no longer absolute", he declared. This new formulation, which eventually swept the board, was named initially as Special Relativity (1905) and then broadened into General Relativity (1916). The earlier view, promulgated by Isaac Newton in the later seventeenth century, had stated clearly that: "Absolute, True, and Mathematical Time, of itself, and from its own nature flows equably without regard to any thing external, and

by another name is called Duration."[9] It seemed an unassailable bedrock. In fact, Newton did distinguish this formulation from mere "Relative, Apparent, and Common Time", which was locally applicable. Yet it was the absolute principle that informed the study of physics and, by extension, that same absolute principle seemed amply confirmed by all other longitudinal subjects, including history, geology, geography, and (importantly for the devoutly if unorthodoxly Christian Isaac Newton) theology. It was this consensus on Time that Einstein's relativity undermined, causing the intellectual "ravages" which Lucien Febvre witnessed in prewar France.

Before going further, however, two key qualifications should be noted. In the first place, neither Einstein nor Minkowski believed that they had abolished Time. Their views do not, therefore, give comfort to those heretics in physics and social philosophy who reject the very concept of temporality. Instead, Einsteinian relativity was based upon the integral links between Time and Space. Thus the theory should really have been defined as "relationality", since that is what it expressed.

A second qualification is also important. Relativity as a theory of physics was hard to comprehend, but its terminology was culturally accessible. It appeared to imply, in a way that Einstein had *not* specified, that absolutes were everywhere to be thrown into doubt. Catch-phrases such as "Everything's relative" or "Anything goes" began to circulate, especially in liberal western circles. Such declarations acted as antidotes to dogma. They also expressed a tolerant humility, which fitted with Einstein's own personality. He reportedly defined his new science in playful terms for popular consumption: "When you are courting a nice girl,

9 Isaac Newton (1642–1727), Principia Mathematica, transl. by Andrew Motte as The Mathematical Principles of Natural Philosophy, London 1729, Vol. 1, p. 9.

an hour seems like a second. When you sit on a red-hot cinder, a second seems like an hour. That's relativity."[10]

His dictum cleverly caught the subjective/perspectival aspect of people's responses to temporality, while allowing his audience to assume (wrongly) that there were no other absolutes. If that were so, than anything indeed might go. Thus an advertisement in *Time Magazine* in 1979, celebrating the centenary of Einstein's birth, declared resoundingly that: "In the cool, beautiful language of mathematics, Einstein demonstrates that we live in a world of relative values."[11]

However, not so. The success of relativity (or relationality) as a better form of understanding the physical universe did not banish all philosophical or physical absolutes, either in theory or practice. Indeed, there is a paradox in asserting positively that nothing can be known. Surely a true belief-in-doubt could only plausibly be formulated with a hesitant question mark? In fact, a statement like "Everything is relative" is itself an absolute claim. As for Einstein, he specifically rejected a complete relativism whether in physics or in morals. He had no intention of endorsing either scepticism or subjectivism. Indeed, he reacted angrily to a colleague's suggestion that individual electrons chose how to react when exposed to radiation.[12] There had to be some absolute yardsticks in the cosmos, in order to be able to measure change. Thus Einstein's already-cited formula $E=mc^2$ contains a constant that remains so by definition. The speed of light in a vacuum (c) constitutes the invariant yardstick, measured at 299,792,458 metres per second.

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10 News Chronicle, 14 March 1949; cited in Simpson's Contemporary Quotations, Boston 1988, p. 208. His explanation also appears, with slight variations, in many websites of Einstein quotations (usually cited without a source).

11 Time Magazine, 24.9.1979, opposite p. 64.

12 Einstein's letter of 29.4.1924, in: Max Born (ed.), The Born-Einstein Letters: Correspondence between Albert Einstein and Max and Hedwig Born, London 1971, p. 82.

Similarly, within quantum physics, which paralleled and then augmented the Einsteinian breakthrough, there remains an irreducible core value within the sub-atomic fluidity. That is Planck's constant (h), against which all other fluctuations are measured. The advent of quantum physics – a term coined in 1931 – undoubtedly added to the lay sense of wonder at the mysteries of the universe. It was discovered that some physical quantities change only in discrete amounts (in Latin: *quanta*), and not in a continuous way. That discovery also seemed to militate against any simple view of a steadily unfolding Time. Nonetheless Max Planck, one of the best-known founders of this new field, also strenuously rejected a complete relativism. Without some invariant unit of measurement, it would be impossible to estimate the tiniest leaps and mutations at sub-atomic level. Thus, even though quantum mechanics relies upon probabilistic calculations of momentum, it still needs a yardstick which is provided by Planck's constant, calculated at 4.2 thousand-trillionth of an electron-volt second.[13] Such ideas were startling enough, even for physicists, who still debate how best to synthesise relativity theory with quantum physics.

Naturally, the effects were even more mystifying for laypeople. The physical universe was emerging as dramatically much more complicated than it immediately appears (which anyway is far from simple). Such complications made it intellectually comprehensible to take a precautionary view, murmuring that: "everything is relative", even though few if any people actually manage to live without believing in one or two fundamental points. Notwithstanding the doubters, generations of human effort have demonstrated that the great cosmos and its local manifestations are neither completely immeasurable nor entirely unknowable.

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13 For Max Planck (1858–1947) and his formula, engraved on his simple gravestone in Göttingen: see John D. Barrow, The Constants of Nature: From Alpha to Omega, London 2002, pp. 23–26.

After all, neither Time nor Space has actually dwindled into a shadow (or, from a Platonic viewpoint, those concepts are no more or less shadowy than they were before Einstein). Humans still walk firmly on the ground and still continue to count the passing minutes, hours, days, weeks, years, centuries and millennia; but the new scientific knowledge, complete with the wider cultural simplifications, gave scope for new approaches in the arts and social sciences. Above all, longitudinal Time seemed dethroned from its old absolute status. Henceforth, it was humbly yoked in its relativistic relation to the lateral co-extensiveness of Space, which accordingly became the first conceptual beneficiary of Einsteinian physics.

II: The Analytical Rise of Space

At the start of the twentieth century, History as a discipline was becoming a large, well-established and ecumenical subject, ballasted by in-depth empirical research into original sources. It was developing many sub-disciplines, ensconced in different national traditions, and all about to become professionalised in universities across the world. The classic concerns of historians were with long-term trends, causes, and effects. This tradition was not one for rapid turning. But gradually rival approaches began to encroach, via innovations in neighbouring subjects in the social sciences. These were stirred not only by new scientific theories but also by applied technologies which in the later nineteenth and early twentieth centuries were producing the motorcar, the airplane, the steamship, the telephone, the telegraph and the radio. Travel times were slashed and people across the world could communicate instantly. The globe itself seemed to be shrinking: a practical invocation of the relativity of spatial relationships.[14]

[14] Wolfgang Schivelbusch, Geschichte der Eisenbahnreise: Zur Industrialisierung von Raum und Zeit im 19. Jahrhundert, München 1977; Stephen Kern, The

Synchronicity became a matter of particular fascination, as the advent of the telephone, radio and later television generated the new phenomenon of secondary (non face-to-face) orality.[15] In that context, it was not surprising that linguistics provided the first case of a subject that switched its emphasis from the diachronic (through-time) to the synchronic (at-one-moment). Traditionally, scholars had focused upon the provenance of words, in a rather antiquarian style. In 1917, however, that approach was subverted by Saussure's "Course in General Linguistics".[16] He was not interested in word-origins and long-term trends but in how language conveyed meanings at any given point in time.[17] His focus was upon words in use: the meshing of word/meaning within the contemporaneous spatiality of speakers and listeners (rather than their specific physical location).

Strikingly, both Saussure and Einstein shared a similar intellectual background in the cultural ferment of later nineteenth/early twentieth-century central Europe. That multi-ethnic and multi-national region, between East and West, was a hub of diversity, interaction, and simmering conflict. Saussure, who was Swiss-born, was Professor of Linguistics in Geneva, whilst the German-born Einstein studied at Zurich and worked in Bern as a young man. The two men had a common contact in the form of another Swiss linguist, Jost Winteler. He was especially well known to Einstein, who acknowledged him as an inspirational figure. Winteler was a pioneer analyst of linguistic sound patterns. For him, they made their

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Culture of Time and Space, 1880–1918, Cambridge, MA 1983; John Stokes, ed., Fin de siècle/Fin du globe: Fears and Fantasies of the Late Nineteenth Century, Basingstoke 1992.

15 Walter Ong, Orality and Literacy: The Technologizing of the Word (London, 1982).

16 Ferdinand de Saussure (1857–1913), Cours de linguistique générale, pub. posthumously, ed. C. Bally and A. Sechehaye, Lausanne 1916; and transl. as Course in General Linguistics, Glasgow 1977.

17 Jonathan Culler, Saussure, Glasgow 1976; Roy Harris, Reading Saussure, London 1987; John E. Joseph, Saussure, Oxford 2012.

meanings within a "configurational or situational relativity" [*Relativität der Verhältnisse*].[18] A relativistic terminology was "in the air".

Saussure's approach to linguistics became known as semiotics or structural linguistics. It quickly became predominant within the relatively small and homogeneous discipline, thanks especially to support in the 1920s from scientific linguists like Roman Jakobson.[19] (Only later and modestly did historical linguistics start to reassert its complementary validity.)[20] Structural linguistics was thus the pioneer subject to become influenced by a timeless "structuralism". That term became pressed into service to define a mode or style of enquiry rather than a single ideology, privileging synchronic meanings over diachronic trends, causes and effects.[21]

Another significant case, learning from linguistics, was cultural anthropology. Particularly in the early years of the subject, there was an assumption that the so-called "primitive" societies in different parts of the world were somehow timeless and immune to change. Closely studied, these apparently "uncontaminated" humans – by some still called "savages" – would reveal the essence of human nature, uncontaminated by twentieth-century technology and economic materialism. Thus Claude Lévi-Strauss (once widely revered but now in deep intellectual eclipse) sought to reveal "The Elemental Structures of Kinship" (1949) and to found the subject of "Structural Anthropology" (1958).[22] These findings

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18 For Jost Winteler (1846–1929), see Walter Isaacson, Einstein: His Life and Universe, London 2007, pp. 27, 29, 38, 67; and Roman Jakobson (1896–1982), 'Verbal Communication', in: Selected Writings, Vol. 2: Word and Language, The Hague 1985, pp. 81–92.

19 For Roman Jakobson (1896–1982), see Linda R. Waugh, Roman Jakobson's Science of Language, Lisse 1976.

20 Theodora Bynon, Historical Linguistics, Cambridge, 1977; Raimo Anttila, Historical and Comparative Linguistics, Amsterdam, 1989.

21 Jonathan Culler (ed.), Structuralism, London 2006.

22 See Claude Lévi-Strauss (1908-2009), Les structures élémentaires de la parenté, Paris 1949; transl. and ed. Rodney Needham, The Elementary Structures of

were presented as fundamental and timeless, although in fact change became apparent when later anthropologists returned to these societies and got different results. In the case of Margaret Mead in Samoa, there were claims that she had been hoaxed.[23] Either way, the first findings could not be freeze-framed.

Other fields that were sooner or later attracted to structuralist approaches were social philosophy, cultural studies, literary theory, and Athusserian Marxism. Many historians at this stage remained aloof. Nonetheless, there were some signs of cross-over and intellectual fertilization. One came from Lucian Febvre, who was one of the founders of France's influential *Annales* School of historians. His study of "La terre et l'évolution humaine" (1922) constituted a limpid call for a geographical history, stressing the "rapport" between human culture and its local environment.[24] It proved to be a prescient programme call for countless local and regional studies which followed in the later twentieth century. Febvre thus provided an intellectual link – onwards to the twentieth-century's foremost analyst of geo-history, his younger friend Fernand Braudel – and backwards to the first excited reception in Paris of relativity theory.

Yet another contribution focused not upon physical geography but upon simultaneous political linkages in one time and place. In 1929 Lewis Namier, an Anglicised Polish Jew with a Central European education, made converts and stirred disputes in equal measure with his radically

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Kinship, London 1969; and id. Anthropologie structurale, Paris 1958; transl. as Structural Anthropology, Harmondsworth 1963.

23 Lowell D. Holmes, Quest for the Real Samoa: The Mead/Freeman Controversy and Beyond, South Hadley, MA 1987; Peter Mandler, Return from the Natives: How Margaret Mead Won the Second World War and Lost the Cold War, New Haven, CT 2013.

24 Lucien Febvre (1878–1956), La terre et l'évolution humaine: introduction géographique à l'histoire, Paris 1922; transl. by E.G. Mountford and J.H. Paxton, A Geographical Introduction to History, London 1925, 2003.

novel study entitled "The Structure of Politics at the Accession of George III".[25] He had been influenced by the theories of Vifredo Pareto, who saw power as circulating between rival elites rather than changing Marxist-style from social class to social class. Accordingly, Namier title revealed his synchronic focus, as he investigated not great trends but the short-term mechanics of political horse-trading among Britain's ruling aristocrats in the 1750s. Namier's technique of group biography has became known as prosopography.[26] It attracted immediate attention and, in Britain by the 1950s, was being applied to many other periods by a dedicated group of Namierite historians.

Over time, however, it has transpired that this method of enquiry works best for studying close-knit groups within stable systems but is much less helpful for explaining conflicts and revolutionary upheavals. One unimpressed critic denounced the whole endeavour as ignoring both the power of ideas and the influence of wider social groups. Thus the Namierites' *pointilliste* gathering of biographical details about political insiders was creating nothing but "a rope of sand, a series of *non-sequiturs*."[27] Nonetheless, Namier's methodology was absorbed into the historians' research repertoire. It has found later applications in social and demographic history, and also in social-scientific studies of power networks – a "sleeping" legacy from continental structuralism.

Meanwhile, throughout the early twentieth century, big bold surveys of global history over many centuries continued to appear, although the majority of specialist historians stuck to relatively finite periods of (say) no more than two to three centuries. Those big panoramic accounts, which

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25 Lewis B. Namier (1888–1960), The Structure of Politics at the Accession of George III, London 1929. See also Linda Colley, Lewis Namier, London 1989.

26 Lawrence Stone, "Prosopography", *Daedalus*, 100 (1971), pp. 46–71; repr. in idem, The Past and the Present Revisited (London, 1987), pp. 45-73.

27 Herbert Butterfield, George III and the Historians, London 1957, pp. 10–11, 204–215, 293, 297–229, esp. p. 214.

attracted much public attention, could not be more different from Namier's close focus upon one decade and one political milieu. Leading examples were Oswald Spengler's "Decline of the West" (1922) and, later, Arnold Toynbee's multi-volume "Study of History" (1931-65).[28] Both offered visions of cyclical history which sapiently warned of the fall as well as the rise of world powers. Yet by the 1950s their reputations began to nosedive and their style of history went decidedly out of fashion. The mid-twentieth-century wars and associated upheavals fostered a reaction against big apocalyptic end-time visions on the one hand and histories of endless sunlit progress on the other.

Correspondingly, the exploration of Space remained much more promising than the conceptual murkiness and unpredictability of Time's unfolding in history. There were many literary, filmic and science fiction speculations, in post-Einsteinian vein, about temporal crossovers, variations, feedbacks and loops.[29] Jorge Luis Borges' short story "The Garden of Forking Paths" (1941) was an example of an intellectual play with the concept of infinite options within history-as-a-labyrinth. His theme is often taken as a literary cogitation on the "many worlds" hypothesis in quantum physics (even though, at the conclusion of Borges's intricate story, there was a finite physical encounter and a finite murder to end the tale).

Given these uncertainties – both playful and intently serious – attention in the 1950s turned to Space as the potential brave new frontier. The new rocket technology would lead the way, turning war-honed

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[28] For Oswald Spengler (1880–1936), see John Farrenkopf, Prophet of Decline: Spengler on World History and Politics, Baton Rouge 2001. And for Arnold J. Toynbee (1889–1975), see Corfield, Time and the Shape of History, pp. 55–56; and contemporary responses in M.F. Ashley Montagu (ed.), Toynbee and History: Critical Essays and Reviews, Boston 1956.

[29] Hans Meyerhoff, Time in Literature, Berkeley 1955; and Gary Westfahl and others (eds), World Enough and Time: Explorations of Time in Science Fiction and Fantasy, Westport Conn. 2002.

expertise from destruction into exploration. Humanity would be lifted out of the close confines of Planet Earth. Colonies on the moon were envisaged, which were to be followed, somewhat later, by regreening strategies for the nearest planets (Mars being a favourite). Bullish tracts enthused about a new Space Age,[30] and promised, with some hubris, the "Conquest" of Space.[31]

III: The Exploration of "Lived Time"

From the 1960s onwards, this compound of political, economic, intellectual, cultural and scientific trends began to have a perceptible impact upon mainstream history. There was a long-term seismic shift, which is only now coming to the end of its cycle. Prolonged narratives began to give way to in-depth probes. Old-style longitudinal studies of political, constitutional, and diplomatic history did not disappear. Yet such approaches became relatively sidelined, not so much in examination papers as in the activities of young researchers. Even economic history, which began in the early twentieth century as the insurgent rival to 'stuffy' old political history, found itself in the intellectual doldrums. It moved suddenly from a 'high noon' of popularity to relative eclipse in the 1970s, especially as new quantitative methodologies turned the subject into a dry and highly technical area of expertise.[32]

Instead, the new fashions encouraged from the 1960s onwards an eclectic mix of urban history, social history, gender history, the history of sexuality, and, especially in the 1980s and 1990s, cultural history. The new

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30 Among many studies with this title, see Harry Harper, The Dawn of the Space Age, London 1946. See also companion-essay by Alexander C.T. Geppert, 'Die Zeit des Weltraumzeitalters, 1942–1972'.

31 Patrick Moore, The Conquest of Space, London 1959; Francis Dréer, Space Conquest: The Complete History of Manned Spaceflight, Sparkford 2009.

32 D.C. Coleman, History and the Economic Past: An Account of the Rise and Decline of Economic History in Britain, Oxford 1987.

characteristic style became that of "synchronic immersion" (latitudinal, in-depth, colourful) rather than "diachronic sweep" (longitudinal, narrative, cool-toned). Favoured themes included identities (group or individual), mind-sets (French: *mentalités*), or "meanings" (whether symbolic or literal). Inspiration was found in a range of ideas – not from physics directly, but indirectly from anthropology, literary theory and social philosophy. One instance in the latter category took the form of explosive debates in the 1970s and 1980s over Michel Foucault's claims for the hegemonic power of language and "discourse'.[33] There was also, in terms of temporal focus, a strengthened willingness to focus on micro-histories.[34] One widely read example was *Montaillou* by Emmanuel Le Roy Ladurie, a prominent *Annaliste*, who was updating his colleagues' earlier emphasis upon longitudinal analysis.[35] Everywhere, the process of change was visible in new courses, new research projects, new publications, new academic societies, new journals and new terms of art, like "discourse", all with fluctuations in their popularity.

"Lived Time" now entered the historians' research agenda not as the dominant master force but as a relevant cultural variable in its own right. There was no expectation that all would respond to or understand temporality in the same way. Instead, relativity was accommodated by explorations of: firstly, changing ways of measuring Time; secondly, changing communal experiences of Time; and, thirdly, changing ways of thinking about Time. The themes had the further merit of being cross-

33 Michel Foucault (1926–1984), Power/Knowledge: Selected Interviews and Other Writings, 1972–1977, ed. Colin Gordon, Brighton 1980; James P. Gee, An Introduction to Discourse Analysis: Theory and Method, London 2005.

34 Sigurôur G. Magnússon and István M. Szíjártó, What is Microhistory? Theory and Practice, Abingdon 2013.

35 Emmanuel Le Roy Ladurie (1929-), Montaillou: village Occiten de 1294 à 1324 (Paris, 1975), transl. by Barbara Bray as Montaillou: Cathars and Catholics in a French Village, 1294-1324 (London, 1978); and context in Peter Burke, The French Historical Revolution: The *Annales* School, 1929–1989, Cambridge 1990.

disciplinary, linking to the history of technology, intellectual history, and social-cultural history. With that breadth, Time studies have begun slowly to multiply. It is notable, however, that their approaches are so variegated that they have not established a specialist sub-field with separate journals and conferences. Such is the embeddedness of the concept that temporality may be examined in any guise – yielding rich research data but tending to restrict twentieth-century historians' interest in theorising on the subject.

Changing technologies of Time measurement and their cultural impact form one obvious subject for contextual exploration. Classics in the genre include Carlo Cipolla's "Clocks and Culture" (1967); David Landes's "Revolution in Time: Clocks and the Making of the Modern World" (1983); and Gerhard Dohrn-van Rossum's "Die Geschichte der Stunde" (1992).[36] Older technologies of time measurement often continued alongside newer ones too. Thus the regular ringing of the church bells remained part of the sensory landscape in nineteenth-century rural France, as Alain Corbin has demonstrated.[37] People were nudged into awareness of the diurnal round without any special effort on their part.

Indeed, cultural embeddedness remains a feature of communal understandings of temporality, since the passing of Time is not constantly at the forefront of human consciousness. To aid awareness, key moments of the annual cycle, such as New Year or midsummer, are often commemorated by popular festivals. For example, one affectionate study has highlighted the rich variety of local celebrations of the "Seasons of the

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36 Carlo M. Cipolla, Clocks and Culture, London 1967; David S. Landes, Revolution in Time: Clocks and the Making of the Modern World, Cambridge, MA 1983; Gerhard Dohrn-van Rossum, Die Geschichte der Stunde: Uhren und moderne Zeitordnungen, Munich 1992.

37 Alain Corbin, Les cloches de le terre: paysage sonore et culture sensible dans les campagnes au XIXe siècle, Paris 1998; transl. as id. Village Bells: Sound and Meaning in the Nineteenth-Century French Countryside, London 1999.

Sun" in seventeenth-century Britain.[38] Moreover, some of these enjoyable popular traditions, albeit subject to change in details, survive to this day.

Communal attitudes to the timetabling of daily life have thus proved a second great theme for Time studies in social and cultural history. Particularly important here was the scintillating 1967 essay by the heterodox English Marxist historian, Edward (E.P.) Thompson.[39] In his "Time, Work Discipline and Industrial Capitalism", he acknowledged a specific debt to anthropology, with its quest to understand the daily "lived experience" of ordinary people. For Thompson, a wide array of evidence including poems and songs suggested to him there was a great break in British history with the coming of factory discipline. Thereafter industrial workers toiled in an externally timetabled system, under close supervision, with "work" divorced from the rest of "life". It was a fate which he contrasted unfavourably with the task-oriented lifestyles of pre-industrial times, clearly implying that the repressive force of industrial capitalism should be rejected. This interpretation was an activist one, incorporating change (and resistance to change), which matched with Thompson's rejection of all forms of innate structuralism.[40] His unorthodox Marxism here chimed with the individualist attitudes found in 1970s hippy counter-culture: "do your own thing".

Gradually, an array of studies took up the challenge to discover exactly what people historically did with their time all day. Generally the

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38 Ronald Hutton, The Stations of the Sun: A History of the Ritual Year in Britain, Oxford 1991.

39 Edward P. Thompson (1924–1993), 'Time, Work Discipline and Industrial Capitalism', in: Past & Present, 38. 1967, pp. 56–97; also in: id. Customs in Common, London 1991, pp. 352–403. See also Bryan D. Palmer, The Making of E.P. Thompson: Marxism, Humanism and History, Toronto 1981; Harvey J. Kaye, The British Marxist Historians: An Introductory Analysis, Cambridge 1984; and Scott Hamilton, The Crisis of Theory: E.P. Thompson, The New Left, and Postwar British Politics, Manchester 2011.

40 For Thompson's polemic against Louis Althusser and structural Marxism, see id. The Poverty of Theory and Other Essays, London 1978.

result has been to find more and more complexities, hence rejecting interpretations which focus upon single short periods of universal transformation.[41] In explicit opposition to E.P. Thomson, Nigel Thrift and Paul Glennie argued that the manufacture and use of clocks and watches had developed in England well before the later eighteenth century.[42] Accordingly, they found no single watershed between "pre-industrial" and "industrial" times. Timetabled lives were to be found long before the 1790s, just as they dominate today among many urban-industrial populations around the world of whom only a minority actually work on the factory floor.

All these studies are immersed in relevant historical detail, taking ever deeper the historians' creed of loyalty to the original sources. The aim is not to supply theories of history – and still less definitions of Time – but to apply the test of evidence within a longitudinal context to all generalisations. Provocative universals thus do not get sympathetic hearings. The suggestion, made in 1981 by the Bulgarian-French feminist Julia Kristeva, that a fluid, cyclical "women's time" eternally contrasts with an inflexible male linearity,[43] has not ultimately found much support, even from fellow-feminists.[44] Such an essentialist view not only underplays historic variations between different cultures and different epochs but also ignores the equally crucial areas of congruent experiences between men and women.

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41 Examples include Tamara K. Hareven, Family Time and Industrial Time: The Relationship between the Family and Work in a New England Industrial Community, Cambridge 1982, esp. pp. 355–370; Hans-Joachim Voth, Time and Work in England, 1750-1830, Oxford 2001.

42 Nigel Thrift and Paul Glennie, Shaping the Day: A History of Timekeeping in England and Wales, 1300–1800, Oxford 2009.

43 Julia Kristeva, 'Women's Time', transl. A. Jardine and H. Blake, in: Signs, 7. 1981, pp. 13–35.

44 See Karlyn Crowley, Feminism's New Age: Gender, Appropriation and the Afterlife of Essentialism, Albany, NY 2011.

As such remarks indicate, Time remains a great topic for dramatic dicta and summary sayings. After all, like sex and death, it is ubiquitous and unavoidable sooner or later (even individuals who abstain from sex have come into the world as the result of parental efforts). Hence a third fascinating theme is the analysis of historical attitudes to Time. Changing viewpoints among scientists provide one way into understanding the history of science itself.[45] Similarly, philosophical ideas about Time can illuminate not just the history of philosophy but also wider cultural attitudes.[46]

There are some seismic eras when people think that they are living in the eye of change. Apocalyptic visions of the end of the world come into this category.[47] But sometimes change may be viewed more benevolently. In intellectual circles in later eighteenth-century Germany and Western Europe more generally, many came to express an optimistic sense of a 'new time' or "*Neuzeit"*. Instead of the imminent End of the World and the Last Judgment, history began to seem not pre-set but open-ended and full of options.[48] This shift was analysed particularly by Reinhart Koselleck, who was one of the founders of the German *Begriffsgeschichte*, studying historical concepts in historical context. He himself expressed some doubt

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45 Stephen Toulmin, The Discovery of Time, London 1965; Robert DiSalle, Understanding Space-Time: The Philosophical Development of Physics from Newton to Einstein, Cambridge, 2006; Jon Agar, Science in the Twentieth Century and Beyond, Cambridge 2012.

46 Adrian Bardon, A Brief History of the Philosophy of Time, Oxford 2013; Jon Whitman, ed., Romance and History: Imagining Time from the Medieval to the Early Modern Period, Cambridge 2015.

47 Eugen Weber, Apocalypses: Prophecies, Cults and Millennial Beliefs through the Ages, Toronto, 1999.

48 Reinhart Koselleck (1923–2006), '"Neuzeit": Remarks on the Semantics of the Modern Concepts of Movement'; and '"Space of Experience" and "Horizon of Expectation": Two Historical Categories', in Reinhart Koselleck, Futures Past: On the Semantics of Historical Time, transl. and ed. Keith Tribe, Cambridge, MA. 1985, pp. 250–253, 276–282. See also Niklas Olsen, History in the Plural: An Introduction to the Work of Reinhart Koselleck, New York 2012.

as to whether "there actually is something called historical time?"[49] The concept of relativity lurked in the background. But his research proceeded to analyse the eighteenth-century advent of linear views of Time, and highly optimistic ones at that. The Victorian belief in "Progress" was in the offing. Two powerful models vying for support were Whiggish views of a steady process of betterment[50] or a Marxist-Hegelian belief in advancement via a series of revolutionary breaks,[51] although it is worth remembering that older models of history as a great cycle (or series of cycles) had by no means disappeared.

Notably, even while most social and cultural historians of Time eschew simple longitudinal narratives, they generally incorporate some element of change. Often it took the binary form of "before" and "after". In Thompson's case, it was a shift from pre-industrial to industrial times. For Koselleck, it was the transition from a traditional cyclicality to a linear "Modernity". These changes might arguably be aligned as different definitions of the same process; but other historians have found other turning points for other trends in many other periods. Cumulatively, the effect has generated not a new long-term narrative but a widespread confusion.

"Modernity" in particular has become, via over-use, a fuzzy and problematic concept. People in more than one era have seen themselves as in the vanguard of history.[52] A great variety of studies have detected the "birth of the new", in periods ranging from classical antiquity via the

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49 Koselleck, Futures Past, 'Preface', pp. xxi–xxii.

50 John B. Bury, The Idea of Progress: An Enquiry into its Origin and Growth, London 1920; Christopher Lasch, The True and Only Heaven: Progress and its Critics, New York 1991.

51 Gerald A. Cohen, Karl Marx's Theory of History, Princeton 1978; David McLellan, Marxism after Marx, Basingstoke 2007.

52 See e.g. the companion-essay by T. Reichard, 'Cigarette Times: Smoking and Temporality in the First Half of the Twentieth Century', in: Geschichte und Gesellschaft.

fourteenth century to the twentieth-century postwar world.[53] Yet those accounts cannot all be talking accurately about the same concept of "Modernity". What exactly does it mean? Jürgen Habermas intervened magisterially from Germany to argue that Modernity remains an "Unfinished Project" (1981).[54] Yet, for Bruno Latour, the French sociologist of science, the epic moment is yet to come: "We Have Never been Modern" (1993).[55] The problems of labelling past ages indicated the areas of interpretation that remain subjective. Are historians overly projecting their own views onto scrappy and imperfect evidence? Can the past really be recovered by later generations? By the 1990s, that lurking challenge to all historians was coming into the open, fostered by relativistic doubts at a moment of cultural flux and millennial anxiety.

IV: The Challenge of Atemporality and Postmodern Scepticism

By the later twentieth century, historians collectively were able to research, explain, and analyse the past in an impressive set of specialist categories. Yet their marked eclecticism in terms of their choice of themes and periods, and their collective stress upon complexities, were not providing clear messages to one another, let alone to the wider public. In that context, there was scope for intellectual challenge from outside the discipline.

Professional history had become modest and realistic in its claims. It had long become divorced from prophecy, even if in troubled times people might hope that the past would offer guidance for the future. All the old

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53 Corfield, Time and the Shape of History, pp. 122–149, esp. pp. 134–139. See also Antoine Compagnon, Five Paradoxes of Modernity, transl. F. Philip, New York 1994.

54 Jürgen Habermas, 'Modernity: An Unfinished Project', 1981; transl. by N. Walker, in Maurizio Passerin d'Entrèves and Seyla Benhabib, eds, Habermas and the Unfinished Project of Modernity: Critical Essays, Cambridge 1996, pp. 38–55.

55 Bruno Latour, We Have Never been Modern, transl. Catherine Porter, New York 1993.

Grand Narratives – giving a big picture of everything, seamlessly from start to finish – had run into the sands. Linear "progress" after two world wars and the revelations of the Holocaust, had lost its plausibility as an across-the-board scenario. There are still enthusiasts for technological utopias, with or without the help of robots or cyborgs. Yet, alongside them, sober analysts equally warn of global population overload and/or ecological degradation and/or doomsday climate change. Equally, the confident Marxist expectation of progressive change through dialectical (revolutionary) leaps from one system to another, culminating in the world-side success of communism, has not turned out as predicted. The system has been overthrown in many countries. And, in those still technically professing communism, the all-powerful central state has not "withered away" as promised, nor has social and cultural equality been achieved.[56] No clear pathway, whether steadily linear or via successive class-revolutions, holds sway.

Similarly, cyclical models of history, with their stress upon the regularity of change, also faced problems. They could incorporate failures and reverses. Yet radical changes do not fit easily into patterns of cyclical repetition. Hence unprecedented developments, such as the detonation of the atom bomb (1945), manned moon-landings (1969–72), the advent of the world-wide web (1991), and the growth of human population to an all-time high, are hard to interpret plausibly as just 'more of the same'. These changes do incorporate familiar features (warfare, technological innovation, human reproduction) but not in familiar ways or with familiar outcomes.

Alongside these theories, the twentieth-century historians did provide one genuinely novel interpretation, which was propounded by Fernand

[56] See critiques in: Stephen F. Kissin, Farewell to Revolution: Marxist Philosophy and the Modern World, London 1978; and David Conway, A Farewell to Marx: An Outline and Appraisal of his Theories, Harmondsworth 1987.

Braudel in the late 1950s. He followed his friend and mentor, Lucien Febvre, in stressing the importance of geography; but in a new multi-layered way. Braudel's model saw the physical world as permanently calibrated at a glacial pace of change, verging on the static. This deep continuity he termed *la longue durée*. On the surface of history, he allowed that there was an animated "froth" of events; and, below that, another intermediate layer of long-term trends. But these were, relatively speaking, ephemera. Real history moved at a glacial pace: with "a slower tempo which sometimes almost borders on the motionless."[57] It was a formulation which justly pointed to elements of deep continuity which are too often overlooked.[58] Nonetheless, the Braudelian model underplayed the importance of events and trends, while it equally overestimated the stability of geographical factors. As a result, Braudelian geo-history was also unable to explain twentieth-century political, military, social, economic, technological and environmental upheavals, let alone radical transformations in earlier eras.

Despairingly, one cry was recirculated to the effect that "History is no more than one damn thing after another". That remark was first coined by a historian in 1935, in a moment of analytical vexation.[59] It updated the old Henry Ford dictum that "History is bunk". These claims hardly disproved the value of studying the past systematically; but they tended to be reiterated in face of complications. By the 1990s particularly there was a recrudescence of serious doubt in many (but not all) western intellectual circles, especially among disillusioned or disappointed Marxists. The

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57 Fernand Braudel (1902-1985), Écrits sur l'histoire, Paris 1977; transl. as On History, London 1980, p. 33. See also id. 'History and the Social Sciences' (1960) and 'History and Sociology' (1958–1960), both available in ibid. esp. pp. 27–33, 74–78.

58 See Corfield, Time and the Shape of History, pp. 26–48; and id. 'Why is the Formidable Power of Continuity so often Overlooked?' November 2010, published in: www.penelopejcorfield.co.uk/BLOG/Archive_Blogs/1.

59 H.A.L. Fisher, A History of Europe, London 1935, Vol. 1, p. vii.

certainties of a regularly unfolding Time and, with that, a regularly unfolding history, were once again put under critical scrutiny. Perhaps there are "many worlds" in parallel, not just one,[60] even if humans have no access to such speculative universes. Alongside the endless flux of quantum mechanics at the micro-level, some scientists and mathematicians turned to study "chaotic" systems in the macro-world. In fact, the outcome enabled probabilistic scenarios of non-linear factors to be modelled, in order to understand the potential consequences of unpredictable conjunctions.[61] As popularised, however, "chaos theory" seemed to legitimise a generalised doubt: "everything is chaos". Specifically, too, it made fashionable a focus upon the role of contingency in history rather than systematic long-term trends or deep continuities.[62]

Doubts about the very existence of Time were once again reiterated by a minority of physicists.[63] Some literary scholars followed suit. One detected a crisis in old-fashioned views of linearity and urged instead "new construction of temporality", which would be flexible and circuitous rather than unvarying and direct.[64] Time seemed "broken". Above all, it was Jacques Derrida, the Algerian-French literary scholar with a following on the USA campus circuit, who gained the most publicity for a thorough-

60 Neill Graham and Bryce DeWitt, eds, The Many-Worlds Interpretation of Quantum Mechanics, Princeton 1973.

61 James Gleick, Chaos: Making a New Science, New York 1987; John Briggs and F. David Peat, Turbulent Mirror: An Illustrated Guide to Chaos Theory and the Science of Wholeness, New York 1990.

62 Gary Itzkowitz, Contingency Theory: Rethinking the Boundaries of Social Thought, Lanham Md 1996; and a popular survey, Erik Durschmeid, The Hinge Factor: How Chance and Stupidity Have Changed History, Vienna 1998; London 1999.

63 Julian Barbour, The End of Time: The Next Revolution in our Understanding of the Universe, London 1999

64 Elizabeth D. Ermarth, Sequel to History: Postmodernism and the Crisis of Representational Time, Princeton 1992, p. 14.

going scepticism.[65] For him, Time had no independent reality, being a concept which "belongs entirely to metaphysics" (clearly, not intended as a compliment). Instead, he evoked an atemporal spatiality, which he named as *khôra* (Greek: space or site).[66] It constituted an eternal present which was able to absorb apparent temporality. But, alas, a sympathetic architect's plan to build a public representation of the Derridean *khôra* in a Parisian public garden was never realised; and the concept remained, as it began, nebulous and unconvincing.

Most historians remained coolly unimpressed. However, when a determined minority within the discipline declared their support for a theoretical formulation of scepticism, known as postmodernism, then the lurking debates at last came into the mainstream.[67] The critics saw themselves as representing a new *Zeitgeist*, challenging the claimed certainties of a departing "Modernity". They took their name from the revival of vernacular architecture in the 1970s, which opposed stark, brutalist "Modernist" buildings in glass-steel-and-concrete. Emboldened postmodern theorists did not deny some role for Time. But they incorporated an undertow of Derridean scepticism and Nietzschean nihilism to generate an approach which was analytically present-minded.[68]

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65 For Jacques Derrida (1930–2004), see Christopher Norris, Deconstruction: Theory and Practice, London 2002; and Benoît Peeters, Derrida: A Biography, Cambridge 2013.

66 Jacques Derrida, Khôra, Paris 1993, pp. 58, 75–76, 96; also transl. in: T. Dutoit (ed.), On the Name: Jacques Derrida, Stanford, CA 1995. Earlier philosophic users of this concept were Martin Heidegger and Julia Kristeva. See also Joanna Hodge, Derrida on Time, London 2007, pp. ix-x, 196-206, 213-214.

67 Keith Jenkins, Re-Thinking History, London 1991; id. (ed.), The Postmodern History Reader, London 1997; Callum G. Brown, Postmodernism for Historians, Harlow 2005.

68 See variously Jean-François Lyotard, La condition postmoderne, Paris 1979; transl. Geoff Bennington and Brian Massumi as: The Postmodern Condition: A Report on Knowledge, Minneapolis 1984; Charles Jencks, What is Postmodernism? London 1986; David Harvey, The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change, Oxford 1989; Lutz Niethammer, Posthistoire: Ist die Geschichte zu Ende? Reinbek 1989; in Eng. transl. by Patrick

It privileged the critic over the text, the historian over the evidence. And since historical researchers not only work with fallible, incomplete evidence, but are themselves fallible and biased, it seemed logical to argue that their historical output must equally fail to be authoritative. As a result, history-writing should be viewed as a sub-genre of literature, as the literary critic Hayden White argued.[69] Histories can thus be classified in a range from tragedy to comedy, although unsurprisingly not many studies of the past qualify in the latter category.

In effect, postmodernist scepticism posed a frontal challenge to the truth claims made by historians. Then at last robust polemics followed on behalf of the discipline.[70] Historians were already well aware of the difficulties in assessing evidence, and the risks of distorting bias on the part of the researcher. Such problems have long been and still remain the stock-in-trade of History induction courses. But the subject depends upon more than the say-so of any one individual or the accuracy of any single piece of evidence. The study of the past is a patient and cumulative project, which over time tries to transcend individual imperfections and errors. It is an endeavour which is shared not only geographically but also across successive generations. Thus, on the strength of intensive research and debate by many scholars, conclusions of greater or lesser degrees of certainty do emerge. On that basis, it is possible – indeed imperative – for

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Camiller as: Posthistoire: Has History Come to an End? London 1992; Fredric Jameson, Postmodernism: Or, the Cultural Logic of Late Capitalism, London 1991; Zygmunt Bauman, Intimations of Postmodernity, London 1992; Michael Drolet (ed.), The Postmodernism Reader: Foundational Texts, London 2003.

69 Hayden White, Metahistory: The Historical Imagination in Nineteenth-Century Europe, Baltimore MD 1983; id. The Content of the Form: Narrative Discourse and Historical Representation, Baltimore, MD 1987; and overview in Herman, Paul, Hayden White: The Historical Imagination, Cambridge 2011.

70 Richard J. Evans, In Defence of History, Cambridge 2001; Joyce O. Appleby and others, Telling the Truth about History, New York 1994; John Tosh, Why History Matters, Basingstoke 2008.

historians to refute (say) Holocaust deniers.[71] As a result, while it remains true that humans cannot ever discover everything about the past, that sobering fact does not mean that nothing can be known. On the contrary, the difficulties constitute a spur to more and better historical research, interpretation and debate.

Paradoxically, meanwhile, the postmodernist critics, who disparaged history, invoked a very schematic model of historical change in their own support. For them, the so-called quest for truth was simply an elite power-broking project. It allegedly began as an ideology of "Modernity", which was held to be the counterpart of the classic eighteenth-century Enlightenment. In the eyes of its postmodernist critics, this cultural/intellectual movement inaugurated a long-running "project" which has tried (in vain) to impose cool, rationalist, scientistic and universalist values upon a pluralist world. For good measure, these characteristics were deemed to be not only "bad" but also typically "male". Instead, for the postmodernist critics, the alternative principles to be cultivated, in lieu of certainty and order, were the virtues of scepticism, doubt, irony, playfulness and eclecticism. These rival qualities – claimed as warm, intuitive, "good" and characteristically "female" – were said to have constituted a new twentieth-century Zeitgeist and thus to have proved the critics' case by overthrowing the old ways.[72]

Nonetheless, the case for such a schematic switch in ideas did not itself withstand critical scrutiny. For a start, the characterisation of a male

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71 Deborah E. Lipstadt, Denying the Holocaust: The Growing Assault on Truth and Memory, Glencoe Ill. 1993; Richard J. Evans, Lying about Hitler: History Holocaust and the David Irving Trial, New York 2002.

72 For rival lists itemising the cultural components of these alleged binaries, see Corfield, "POST-Medievalism/Modernity/Postmodernity?" pp. 383–388, citing postmodernist pundits Ihab Hassan, "Toward a Concept of Postmodernism", in idem, *The Dismemberment of Orpheus: Toward a Postmodern Literature*, Madison WIS. 1982, pp. 267-268; and Charles Jencks, "The Post-Modern Agenda", in idem, *The Post-Modern Reader*, London 1992, p. 34.

Modernity and a female Postmodernity seemed to incorporate a crude gender essentialism which is both empirically and theoretically questionable.[73] Furthermore, the quest for truth in many fields of human endeavour not only preceded the eighteenth-century Enlightenment, which was not a uniform (and humourless) movement,[74] but also continues to the present day. Equally, scepticism, doubt, irony and intellectual playfulness were by no means inventions of the twentieth century. It is implausible to envisage cultural and intellectual life as proceeding by binary discontinuities overnight. Often there are overlapping, intertwined and sometimes rival views – and indeed architectural styles – at the same time.

Viewed retrospectively, it seems that the alleged postmodernist moment peaked in the prelude to 2000. It marked a mood of not merely *fin-de-siècle* doubt but positively *fin-de-millennium* intellectual exhaustion. [75] Yet, even then, it had not carried all before it; and it waned fairly rapidly thereafter. As if constituting a sign, the whimsical retro-style of architecture of the 1970s, once dubbed *the* postmodernist style of late capitalism, is being overtaken by the renewed dominance of glass-and-steel.[76] As the mood changes, so does the terminology. Books with postmodernism in their title are disappearing. Rather than naming a new

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73 After some initial support, many feminists rejected the postmodernist philosophy of doubt, which would undermine allegiance to feminism: see e.g. Somer Brodribb, Nothing Matters: A Feminist Critique of Postmodernism, Melbourne 1992; Marysia Zalewski, Feminism after Postmodernism: Theorising through Practice, London 2000.

74 Roy Porter and Mikuláš Teich, eds, The Enlightenment in National Context, Cambridge 1981; Margaret Jacob, The Radical Enlightenment: Pantheists, Freemasons and Republicans, New York 1981; Gertrude Himmelfarb, The Roads to Modernity: The British, French and American Enlightenments, New York 2004; and Jonathan Israel, A Revolution of the Mind: Radical Enlightenment and the Intellectual Origins of Modern Democracy, Princeton 2010.

75 Penelope J. Corfield, 'POST-Medievalism/Modernity/Postmodernity?' in: Rethinking History, 14. 2010, pp. 383-388; also posted in: www.penelopejcorfield.co.uk/What_is_History?/Pdf20.

76 Charles Jencks, Critical Modernism: Where is Postmodernism Going? Chichester 2007, pp. 214–215.

age, the concept is "slipping into the strange history of those futures that did not materialise".[77] Faint echoes survive, for example in references to *Post-Postmodernism*.[78] But intellectual doubt, which is a perennially valid stance, does not now constitute the universal *Zeitgeist.* Belief in a pervasive atemporality, beyond Time and all its works, is hard to sustain, particularly in epochs of great change.

V: The Coming Temporal Turn

Today there are signs, across many disciplines, of a coming "temporal turn". That phrase acknowledges a fresh focus of intellectual attention. One physicist, speculating in 2002 about "undiscovered ideas", forecasts: "I think *Time* still holds some surprises".[79] Others in different disciplines have suggested the same. A philosopher in 2004 comments: "My recommendation is to watch *Time* closely."[80] Certainly the world's physicists take that literally. They cooperate to measure time via a special cold-caesium atomic clock in Switzerland, which has the startlingly small error rate of no more than one second astray per thirty million years. The result is a globally shared resource, which constitutes a cultural as well as a technological marvel.[81]

Among the reasons for a renewed interest in the diachronic among historians and policy-makers are the pressures of big long-term issues, which will take time to become resolved. History has bitten back. Climate

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77 George Myerson, Ecology and the End of Postmodernity, Cambridge 2001, p. 74.

78 E.g. Jeffrey T. Nealon, Post-Postmodernism: Or, the Cultural Logic of Just-in-Time Capitalism, Stanford 2012.

79 Tom Siegfried, Strange Matters: Undiscovered Ideas at the Frontiers of Space and Time, Washington DC 2002, p. 245.

80 Jim Baggott, Beyond Measure: Modern Physics, Philosophy and the Meaning of Quantum Theory, Oxford 2004, p. 288.

81 For Coordinated Universal Time (UTC), which is adjustable to allow for slight unpredictable variations in the Earth's rotation, see Claude Audoin and Bernard Guinot, The Measurement of Time: Time, Frequency and the Atomic Clock, New York 2001.

change is obviously one major question, especially now that geologists are debating whether to name (and when to date) a new era in Earth history as the Anthropocene to record the impact of human interventions.[82] The many conflicts over political and religious issues world-wide are another. And the unexpected 2008/9 global economic recession, whose ramifications are still unfolding, is a third.[83] Despite the present-mindedness of much contemporary culture, the need to understand the long-term workings of Time, as evidenced in human and Earth history, cannot be gainsaid.

To historians, this recognition comes not as a surprise but as a welcome justification. Time, for them, has never gone away. So the discipline is busy updating itself in response to the new intellectual climate. The recent research reign of the micro-study is being counter-balanced by a return to macro-sweep.[84] There are campaigns to incorporate more long-span courses into teaching programmes. Global history is a fast-growing field.[85] Short-termism among today's policy-makers is rousingly attacked; and policy-makers are urged to consult the longitudinal expertise of the historians.[86] Past maps and models of temporal change are being re-

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82 See Mark Levene and others, eds, History at the End of the World? History, Climate Change and the Possibility of Closure, Penrith 2010; Paul Dukes, Minutes to Midnight: History and the Anthropocene Era from 1763, London 2011; John L. Brooke, Climate Change and the Course of Global History: A Rough History, New York 2014.

83 For calls for economists to study economic history, see Thomas Piketty, Capital in the Twenty-First Century, Paris 2013; in Eng. transl. by Arthur Goldhammer, Cambridge, MA 2014, pp. 31–33, 573–577; David North, The Economic Crisis and the Return of History, Oak Park 2011; and the students at Manchester University's Post-Crash Economics Society, in www.post-crasheconomics.com.

84 Penelope J. Corfield, Historians and the Return to the Diachronic, in: Gelina Harlaftis and others (eds), New Ways History: Developments in Historiography, London 2010, pp. 1–32, 187–192; also posted on: www.penelopejcorfield.co.uk/What_is_History?/pdf27.

85 Robert B. Bain, "Challenges of Teaching and Learning World History", in Douglas Northrop (ed.), A Companion to World History, Chichester 2012, pp. 111–127.

86 Jo Guldi and David Armitage, The History Manifesto, Cambridge 2014.

evaluated.[87] Historians are being updated on the range of Time studies.[88]And a new lobby-group has emerged in the form of the International Association for Big History (founded 2010).[89] Its practitioners take the longest view possible. They may start with the birth of the cosmos or merely with the advent of the human species.[90] But historical studies are encouraged to reach back into Deep Time – covering the eons of pre-human geological Time – if the analysis so requires, cross-linking with all the other disciplines which also undertake longitudinal studies.

Such changes within the discipline will entail a reconsideration of historical periodisation, or how historians divide up the past. But there is no need to seek general agreement for a universally defined set of stages or a common set of names for different eras. (Happily, since historians profoundly disagree). Instead, what is needed is a better understanding of how continuities and changes of different kinds and degrees continually interlock and interact, in an ever-varying format. My own formulation of this dynamic system identifies a three-dimensional or "trialectical" through-Time perspective. The key components are: continuity (persistence); evolution (momentum) and revolution (turbulence).[91] So considered, Time has three dimensions, as does Space.

Lastly, then, the coming "temporal turn" does not envisage a return to an absolute and stand-alone temporality. The work of Einstein holds good.

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87 Eviatar Zerubavel, Time Maps: Collective Memory and the Social Shape of the Past, Chicago 2003.

88 Robert Hassan, 'Globalisation and the "Temporal Turn": Recent Trends and Issues in Time Studies', in: Korean Journal of Policy Studies, 25. 2010, pp. 83–102.

89 See www.ibhanet.org.

90 Examples include David Christian, Maps of Time: An Introduction to Big History, Berkeley, CA 2004; Cynthia S. Brown, Big History: From the Big Bang to the Present, New York 2007; David L. Smail, On Deep History and the Brain, Berkeley, CA 2008; Fred Spier, Big History and the Future of Humanity, Oxford 2010.

91 Corfield, Time and the Shape of History, pp. 122–123, 211–216, 248–252; and id. History and the Temporal Turn.

Relativity theory retains its place in the physics textbooks, even if cultural relativity needs to be qualified in a world that still contains absolutes. There are universals and there are contingencies, challenging observers and participants to determine where the boundaries lie. The new "Temporal Turn" also takes as given that Time and Space are integrally linked together. There is no need to choose between an independent temporality and a separate spatiality. Historians and geographers can work in concord.[92] Whether the chosen nomenclature is Space-Time or Time-Space is less important than accepting their relative interconnections or relationality, as Einstein might have named their link.

Crucially, the key is to reject Time nihilism. That realisation provides the momentum for renewal. To conclude with my own speculative thought: temporality seems to be something akin to a unique and dynamic form of super-energy, holding and unfolding everything together in Time-Space. Perhaps that is too fanciful from a mere historian. But anyway Time is now emerging from the conceptual shadows to partner Space, as jointly framing cosmic and human history. *Adieu* to atemporality. Welcome to a full appreciation and application of the logical consequences of Einstein and Minskowski. And about time too.

[92] Peter Merriman and others, 'Space and Spatiality in Theory', Dialogues in Human Geography, 2 (2012), pp. 3-22.